Proceedings of the Iowa Academy of Science

Volume 40 | Annual Issue Article 121

1933

Differential Reactions of Newborn Infants to Different Degrees of Light Intensity

LaBerta A. Weiss

State University of Iowa

period of 14 days. These practices were given as group practices during the regular music period. At the end of the practice period each child recorded the song on a dictaphone record, first in the key of the practice period (the investigator gave the starting pitch), and then in a key 3 semi-tones lower.

These same children also recorded songs of their own choosing at pitch levels and ranges also of their own choice. A test of immediate reproduction was also recorded.

Both the experimenter's and the child's voices were recorded on the dictaphone discs which were later transcribed on specially prepared paper.

The results indicate that most four- and five-year-old children sing at pitch levels and with ranges of their own choosing, although the directional changes and interval distances may correspond very closely to those of the song presented.

A comparison of what the child can, or is willing to do, with what he is asked to do according to present songbooks and instructions, is drawn. The general conclusion is that present preschool and Kindergarten songs are presented, both in text and teaching, in a range and pitch level too high for the majority of children to sing.

Iowa Child Welfare Research Station,
State University of Iowa,
Iowa City, Iowa.

DIFFERENTIAL REACTIONS OF NEWBORN INFANTS TO DIFFERENT DEGREES OF LIGHT INTENSITY

LaBerta A. Weiss

As one aspect of a larger problem on the responsiveness of the newborn infant to the external environment, 90 infants, ranging in age from zero to ten days, have been studied under three intensities of light to determine (1) whether there are measurable differences in the amount of activity of the newborn under different light intensities, and (2) what the characteristics and implications of these differences are, provided they exist. The light intensities used may be described as minimal, dim and moderate. The exact strengths at the level of the infants' eyes were determined by means of an illuminometer. Each of the stimuli were presented over a five to six minute period, in contrast to earlier sensory studies on newborns in which the stimuli were of momentary duration. In-

fants were examined in an experimental cabinet which allowed control of factors other than the one being studied. Activity was measured by means of the stabilimeter-polygraph technique.

The experiment has revealed a significant difference in the amount of activity of the infants in the three situations: activity was greatest in the minimal situation, and least in the moderate situation. The effect of the stimuli was not maximal until the third to fourth minute following presentation of the stimuli. Differences in amount of activity between situations seemed to be related to differences in strength of stimuli between the situations. The differential reactions were greatest when the infants were awake and moderately full, and greater after the third day of age than before. Amount of crying revealed the same trends as noted above, being significantly less under moderate than under minimal light.

IOWA CHILD WELFARE RESEARCH STATION,
STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

A CRITICAL ANALYSIS OF READING TEST SCORES

FRANCIS P. ROBINSON AND FRIEDA H. MCCOLLOM

Since most reading tests have time limits, their scores are due both to comprehensive ability and to speed of reading. In this experiment a time limit test and a no time limit test are analyzed to determine the relative importance of each of these variables. Although the usual clinician or teacher uses a reading test score primarily as a measure of comprehensive ability, a critical analysis indicates that speed of reading determines these scores more than comprehensive ability. The length of the test as a fatigue factor was also found to determine the type of reading a person does.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

EYE-MOVEMENTS OF GOOD READERS

ROBERT Y. WALKER

Simultaneous binocular records of the vertical and horizontal eye-movements were obtained by photographic technique for fifty students ranking in the top decile in the *Iowa Silent Reading Test* and the *University of Iowa Qualifying Examination*. Norms of